New Jersey Asthma Awareness and Education Program
Chronic Disease Prevention and Control Services
50 East State Street
Trenton, NJ 08625
(609) 984-6137
www.nj.gov/health/asthma

Mary E. O'Dowd, MPH
Commissioner

Chris Christie
Governor

DATA BRIEF: UNCONTROLLED ASTHMA IN NEW JERSEY ADULTS (18+ YEARS)

About asthma

- Asthma is a serious and chronic disease that is marked by inflammation and bronchoconstriction in the airways.
- Symptoms of asthma include shortness of breath, coughing, wheezing and chest tightness.
- Asthma symptoms can be triggered by:
  - **smoke (tobacco and other types), allergies, illness, acid reflux, exercise, some medications, unvented gas appliances, strong odors, air pollution or weather conditions, some foods, and strong emotions,**
  - **allergens from dust or dust mites, cockroaches, rodents, pets, mold, pollen, or grass.**
- Asthma cannot be cured, but it can be controlled.
- Uncontrolled asthma can lead to missed work days, emergency department visits, hospitalization and even death.

Defining asthma control[1]

	Controlled	Uncontrolled	
		Poorly Controlled	Very Poorly Controlled
Number of days with asthma symptoms in previous 30 days	8 or fewer	9 or more	All 30 days throughout day
Number of days with difficulty sleeping in past 30 days	2 or fewer	3 to 12	13 or more
Activity limitation due to asthma in past year	None	Little to moderate	A lot

Respondents are classified by their worst reported symptom, so someone with 6 symptom days, 6 days difficulty sleeping and a lot of activity limitation would be classified as very poorly controlled.

Key findings

Compared to adults with controlled asthma, adults with uncontrolled asthma report:

- ***more work/activity days lost due to asthma***
- ***more urgent doctor visits***
- ***more emergency department visits***
- ***more hospitalizations***

Among adults with asthma, uncontrolled asthma is reported more often among those who are:

- ***35 years and older***
- ***Latino/Hispanic***
- ***with lower education levels***
- ***with lower household income levels***

Compared to adults with controlled asthma, adults with uncontrolled asthma report:

- ***higher prevalence of other respiratory disease***
- ***higher prevalence of cardiovascular disease***
- ***higher prevalence of depression***
- ***higher prevalence of work-related asthma***

Compared to adults with controlled asthma, adults with uncontrolled asthma more often report:

- ***cost barriers to receiving care and getting medications***
- ***seeing mold or having a musty odor in their home***
- ***smoking or that someone smokes in their home***
- ***improper use of quick relief inhaler medications***

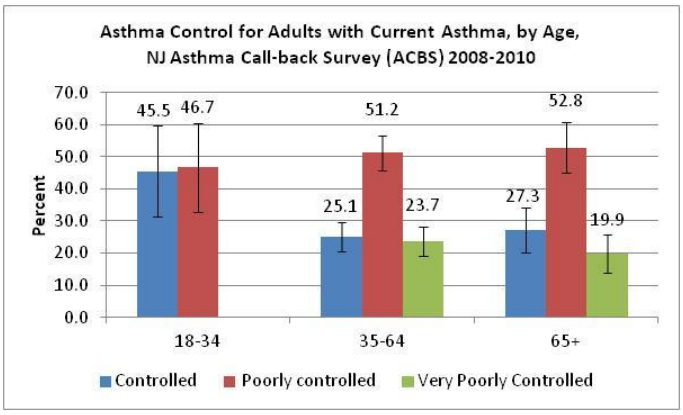
Asthma control among NJ adults with active asthma[2]

Asthma Control		**Estimated NJ adults**	
		Percent (95% confidence interval)[3]	**Number (95% confidence interval)**[3]
Controlled		36.0 (30.9-41.1)	230,727 (188,990 - 272,464)
Uncontrolled	*Poorly controlled*	47.2 (42.2-52.2)	302,515 (268,514 - 336,515)
	Very Poorly Controlled	16.8 (13.2-20.4)	107,584 (83,425 - 131,744)
Total		100.0 (n/a)	640,826 (590,681-690,971)

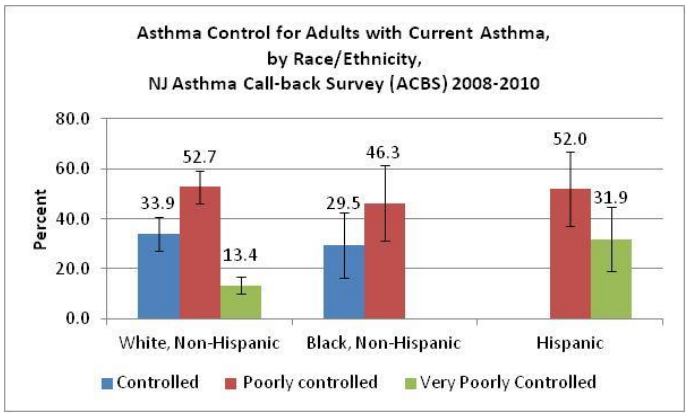
Active asthma means that at least one of the following occurred during the year prior to the survey: asthma symptoms experienced, asthma medication taken or an asthma-related doctor visit.

Demographic factors[4]

- Adults 35 and older are more likely to have uncontrolled asthma than adults under 35.
- Latino or Hispanic adults were more likely to have very poorly controlled asthma than white, non-Hispanic adults.

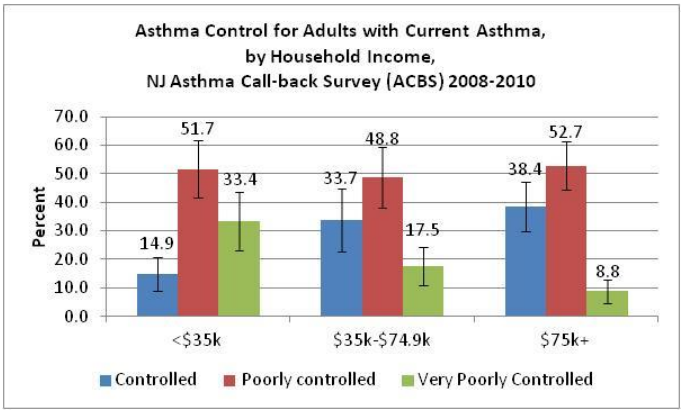


Rao-Scott Chi Square, p=.0051 (too few cases to show estimates for 18-34, very-poorly controlled)

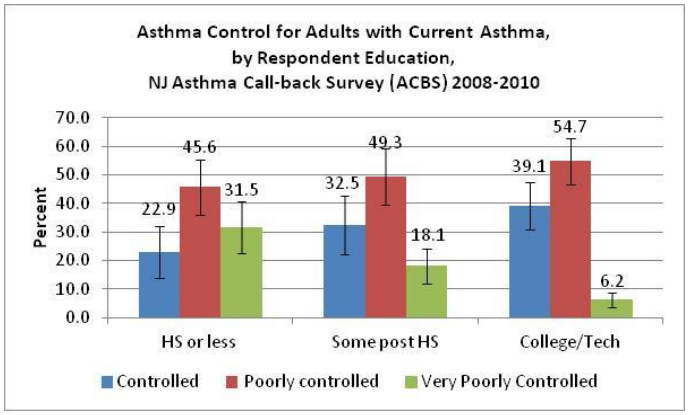


Rao-Scott Chi Square, p=.0279 (too few cases to show estimates for very-poorly controlled asthma among Black, Non-Hispanic adults and for controlled asthma among Hispanic adults)

- Adults in households with income of less than $35,000 per year were more likely to have uncontrolled asthma than adults in higher income households, and more likely to have very-poorly controlled asthma than adults in households with income of $75,000 and above.
- Adults with a high school degree or less were more likely to have very-poorly controlled asthma than adults with a college degree or higher.



Rao-Scott Chi Square, p<.0001

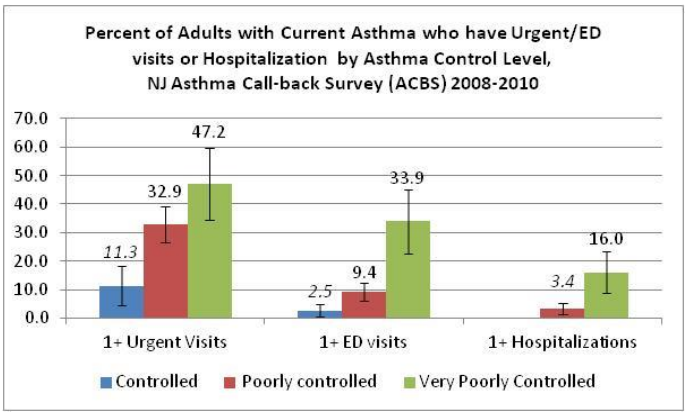


Rao-Scott Chi Square, p<.0001

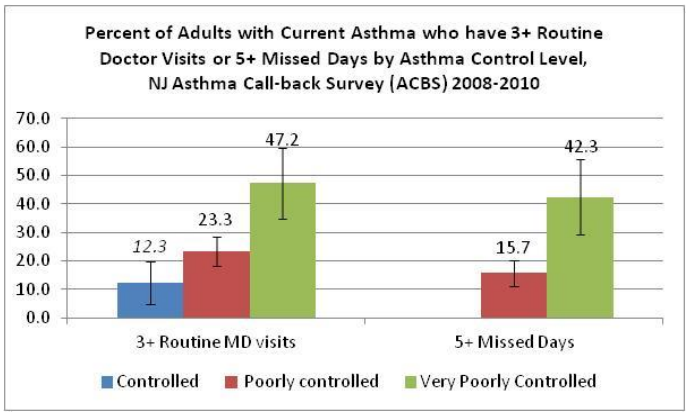
Current asthma means that the adult has responded both that they have been given a diagnosis of asthma at some point (lifetime asthma) and that they still have asthma (current asthma).

Health care utilization and missed days [4]

- Adults with uncontrolled asthma had more urgent doctor visits, ED visits or hospitalizations than those with controlled asthma.
- Adults with very poorly controlled asthma were more likely to have ED visits, hospitalizations and 3 or more routine doctor visits in the past year than other adults with asthma.
- Adults with very poorly controlled asthma were more likely to have 5 or more missed activity days than those with poorly controlled asthma, and both groups were more likely to have missed days than adults with controlled asthma.

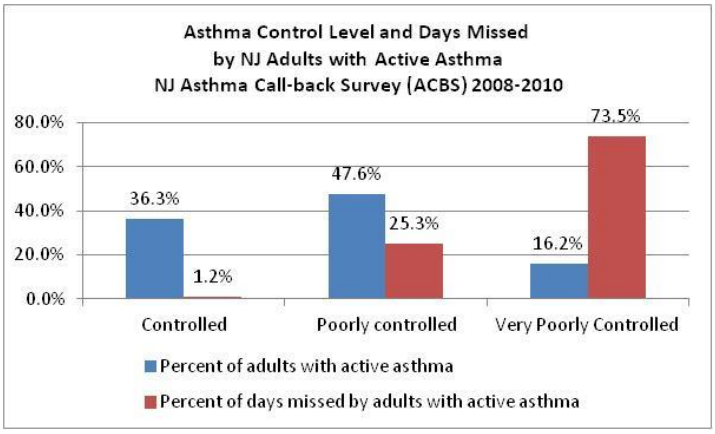


Rao-Scott Chi Square, p<.0001 (too few cases to show estimates for hospitalizations among adults with well-controlled current asthma; estimates in italics are too imprecise due to low numbers to be reliable)



Rao-Scott Chi Square, p<.0001 (too few cases to show estimates for missed days among adults with well-controlled current asthma; estimates in italics are too imprecise due to low numbers to be reliable)

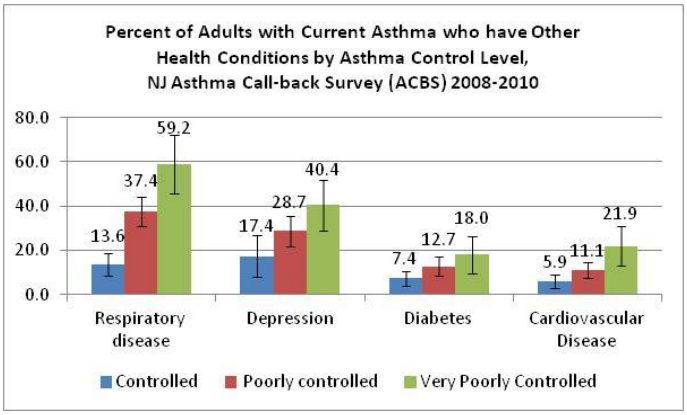
- Adults with very poorly controlled asthma account for a disproportionate number of days missed (unable to work or carry out usual activities) due to asthma. Among adults with active asthma, about 16% have very poorly controlled asthma yet this percentage accounts for about 75% of the days missed.



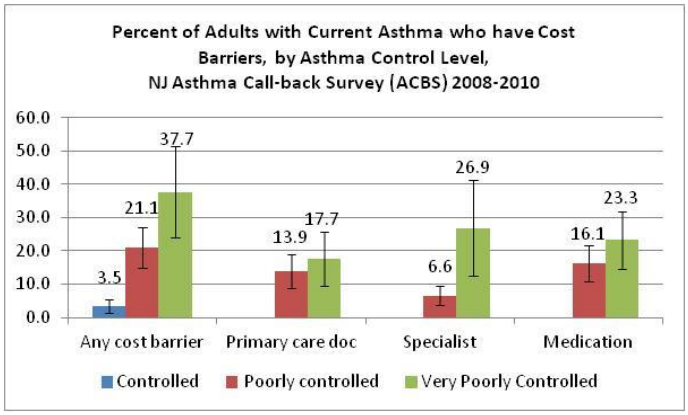
Active asthma means one or more of these happened in the year prior to the survey: asthma symptoms experienced, asthma medication taken or an asthma-related doctor visit.

Other health conditions and cost barriers[4]

- Adults with very poorly controlled asthma were more likely than all other adults with asthma to report other respiratory disease such as COPD, emphysema and chronic bronchitis. Adults with poorly controlled asthma were more likely than adults with controlled asthma to report respiratory disease.
- Adults with very poorly controlled asthma were more likely than adults with controlled asthma to report depression and cardiovascular disease.
- Diabetes did not vary significantly by asthma control level.
- Adults with uncontrolled asthma were more likely to report all cost barriers than those with controlled asthma.
- Adults with very poorly controlled asthma reported more cost barriers in seeing specialists than adults with asthma that was poorly controlled.



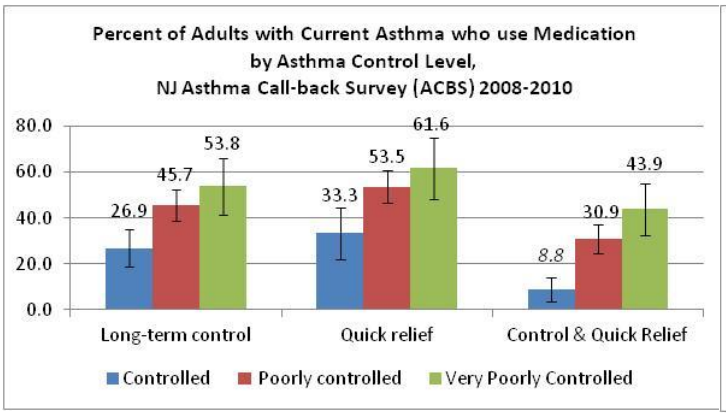
Rao-Scott Chi Square, p<.0001 for respiratory disease, p=.0126 for depression, p=.03 for diabetes and p=.0001 for cardiovascular disease.



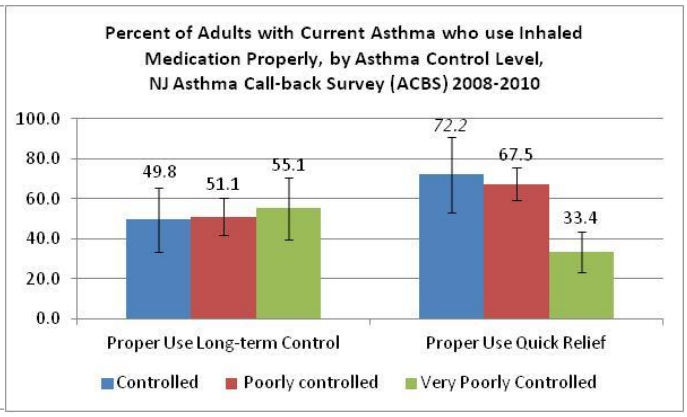
Rao-Scott Chi Square, p<.0001 (too few cases to show estimates for adults with well-controlled current asthma for the specific cost measures)

Medication use[4]

- Adults with uncontrolled asthma were more likely to report using inhaled long-term control and/or inhaled quick relief asthma medications than those with controlled asthma.
- Adults with very poorly controlled asthma were less likely to report proper use of inhaled quick relief medications than other adults with asthma. There was no significant difference by asthma control level in the proper use of inhaled long-term control medication (about 50% of all groups).



Rao-Scott Chi Square, p=.0003 for long-term control, p=.0023 for quick relief and p<.0001 for control and quick relief; estimate in italics is too imprecise due to low numbers to be reliable

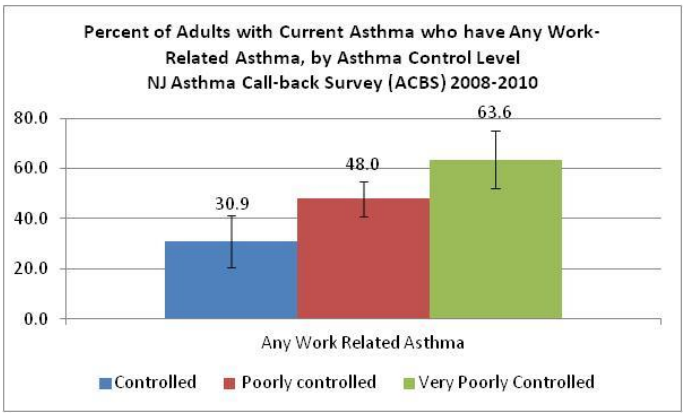


Rao-Scott Chi Square, p=.0004 for quick relief; estimate in italics is too imprecise due to low numbers to be reliable

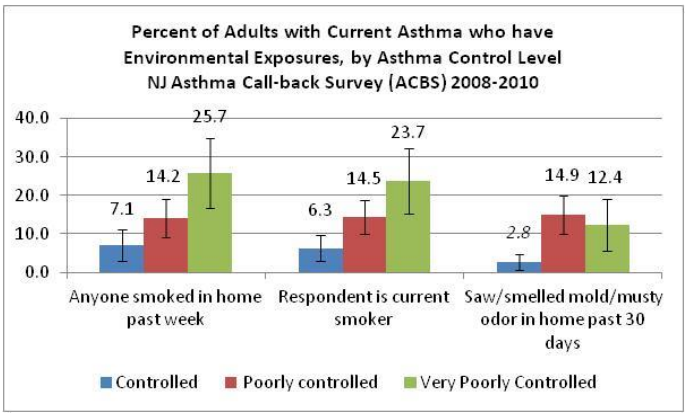
Proper use is calculated only among those who used inhaled medication. For long-term control medication, proper use is defined as taking all inhaled long-term control medication on a schedule every day, not taking it for an attack and not taking it before exercise if it was not designed for this purpose. For quick relief medication, proper use is defined as not taking any inhaled quick relief medication on a schedule every day, taking it for an attack and not taking it before exercise if it was not designed for this purpose.

Home environment and work-related asthma[4]

- Adults with very poorly controlled asthma were more likely to report any kind of work-related asthma than adults with controlled asthma.
- Adults with very poorly controlled asthma were more likely to report that anyone smoked in their home in the past week than adults with controlled asthma.
- Adults with uncontrolled asthma were more likely to report that they themselves were a current smoker than adults controlled asthma.
- Adults with uncontrolled asthma were more likely to report seeing or smelling mold or a musty odor in their home in the past 30 days than adults with controlled asthma.



Rao-Scott Chi Square, p=.0002. *Work-related asthma means that the respondent believes or has been told by a health professional that their asthma has been caused or aggravated by a current or previous job, or that they have changed jobs due to asthma.*



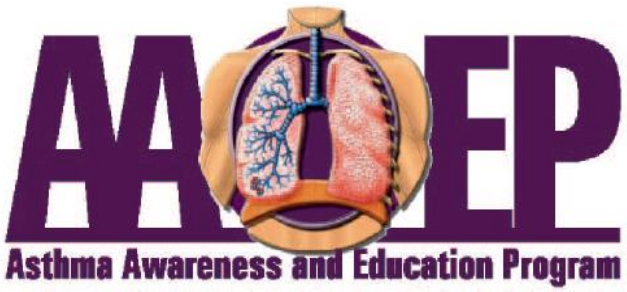
Rao-Scott Chi Square, p=.0005 for anyone smoking, p=.0002 for respondent smoking and p=.0001 for mold; estimate in italics is too imprecise due to low numbers to be reliable

Factors that did not differ significantly by asthma control level

Asthma education (including being taught: to recognize early signs/symptoms, what to do during an asthma episode/attack, to use a peak flow meter; or taking a course on managing asthma, any of these or more than three of these)	The following environmental factors (cooking with gas, having an unvented gas appliance or a word burning stove or fireplace, indoor pets, roaches or mice/rats seen in the home during past 30 days, bedroom carpeting)
Receiving advice to modify environment at home, school or work	The following actions to mitigate exposures (use of aircleaner/purifier, dehumidifier, exhaust fan in kitchen or bathroom, mattress or pillow covers, wash water temperature)
Having health insurance with no gaps in the past year	
Having an asthma action plan	Instruction on inhaler use
Gender	Getting a flu shot in the past year

For more information:

- New Jersey Asthma Awareness and Education Program: www.nj.gov/health/asthma
- NJ Work-related Asthma Program: http://www.nj.gov/health/eoh/survweb/wra/index.shtml
- Pediatric Adult Asthma Coalition of New Jersey (PACNJ): www.pacnj.org



Technical Notes:

1. This definition of **asthma control** is based on Expert Panel Report 3 (EPR3): Guidelines for the Diagnosis and Management of Asthma, and was also used in Gunnells (2010). We have changed the category titles to facilitate describing the data—the table below shows the EPR classifications compared with ours:

EPR3 category	Our category
Well-controlled	Controlled
Not well controlled	Poorly controlled
Very poorly controlled	Very poorly controlled

2. **Active asthma** means that at least one of the following occurred during the year prior to the survey: asthma symptoms experienced, asthma medication taken or an asthma-related doctor visit.
3. A **95% confidence interval** represents the chance that averages calculated on repeated samples of the same size would fall within a range of estimates—i.e., we expect that 95% or 95 out of 100 times, the result would fall within the range given. 95% confidence intervals are also shown in most figures in this document with use of error bars. When we say that two groups are different, we mean that their confidence intervals do not overlap. We only include estimates based on at least 50 survey responses, and only consider estimates reliable if their standard error is less than 30% of the estimate.
4. Analyses in these sections are based on adults with current asthma except where noted otherwise. **Current asthma** means that the adult has responded both that they have been given a diagnosis of asthma at some point (lifetime asthma) and that they still have asthma (current asthma). The answer to this question has been used in some cases to determine which followup questions are asked.
5. The **Rao-Scott Chi Square** test can be used to determine if a relationship exists between variables when using complex survey data.

References and Data Source:

- Centers for Disease Control and Prevention (CDC). Asthma Call-back Survey Data, 2008-2010. http://www.cdc.gov/asthma/ACBS.htm
- Expert Panel Report 3 (EPR3): Guidelines for the Diagnosis and Management of Asthma http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.htm
- Gunnells LC. (2010). Very poorly-controlled asthma among adults in Washington state. Washington State Journal of Public Health Practice, 3(1):49-57.

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